IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant:	Maarten Menzo Wentink
Title:	TECHNIQUE FOR OPTIMIZING BACKOFF FOR A SHARED RESOURCE
Appl. No.:	10/689,018
Filing Date:	10/20/2003
Examiner:	Nicholas R. Taylor
Art Unit:	2441
Conf. No.:	4108

REPLY BRIEF

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This Reply Brief is being filed in response to an Examiner's Answer dated March 22, 2011, maintaining the rejection of Claims 1-14, 17, 18, 21-23, and 25-32. As a result, this Reply Brief is timely filed under the provisions of 37 C.F.R. § 41.41. Appellant does not believe that a fee is due for this filing. If this fee is deemed to be insufficient, authorization is hereby given to charge any deficiency (or credit any balance) to the undersigned deposit account 19-0741.

Appellant hereby respectfully requests reconsideration of the Application and reversal of the various pending rejections by the Board.

STATUS OF CLAIMS

Claims 15, 16, 19, 20, and 24 were cancelled in Appellant's Amendment and Reply filed on January 23, 2009 with a Request for Continued Examination.

The present appeal is directed to claims 1-14, 17, 18, 21-23, and 25-32, all of which stand rejected pursuant to a Final Office Action dated August 27, 2010, and a Notice of Panel Decision from Pre-Appeal Brief review mailed November 24, 2010. Claims 1-14, 17, 18, 21-23, and 25-32 are being appealed. The claims with the appropriate status references are shown in the attached Claims Appendix.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The first ground of rejection to be reviewed on appeal is the Examiner's rejection of claims 1, 2, 4-7, 13, 17, 22, 25, 28, 30, and 32 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Publication No. 2002/0163929 (Li et al.) and "IEEE 802.11 Protocol: Design and Performance Evaluation of an Adaptive Backoff Mechanism" (Cali et al.)

The second ground of rejection to be reviewed on appeal is the Examiner's rejection of claims 3, 8-12, 14, 18, 21, 23, 26, 27, 29, and 31 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Li et al., Cali et al., and further in view of "PAMAS – Power Aware Multi-Access Protocol with Signaling for Ad Hoc Networks" (Singh et al.)

ARGUMENTS

Discussion of Rejections under 35 U.S.C. § 103(a):

Requirements for a *prima facie* case of obviousness

In *In re Rijckaert*, 9 F.3d 1531, 1532, (Fed. Cir. 1993), the Federal Circuit outlined the burden on the PTO as follows with regard to rejections made under 35 U.S.C. § 103:

> In rejecting claims under 35 U.S.C. 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992). Only if that burden is met, does the burden of coming forward with evidence or argument shift to the applicant. *Id.* "A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell* , 991 F.2d 781, 782, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (CCPA 1976)). If the examiner fails to establish a *prima facie* case, the rejection is improper and will be overturned. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

In order to make a *prima facie* case of obviousness, the Examiner must demonstrate that the prior art (i) teaches or suggests every claim limitation, (ii) provides a motivation to combine (or modify) the teachings of the selected references, and (iii) provides a reasonable expectation of success. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438 (CAFC 1991); MPEP § 2143. This is the "TSM" test for obviousness which was recently affirmed by the Supreme Court. *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350, 550 U.S. 398 (2007), slip op. at 15 (2007). In explicating the correct standard for this test, the *KSR* Court reaffirmed previous holdings that an invention "is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR*, slip op. at 14.; see also, *In re*

Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Furthermore, the Court warned the fact-finder to be aware of the distortion caused by hindsight bias and to be cautious of arguments reliant upon *ex post* reasoning. *KSR*, slip op. at 17.

Representative claim

Claim 1 recites:

A method for accessing a shared resource comprising:

a first station sharing a resource with a plurality of other stations;

the first station determining a first average backoff interval by measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource; and

once it is determined that the first station desires access to the shared resource and the shared resource first becomes available, the first station refraining from contending for access to said shared resource for at least an interval substantially equal to the first average backoff interval.

I. The Examiner has not established a prima facie case of obviousness with regard to claims 1, 2, 4-7, 13, 17, 22, 25, 28, 30, and 32 of the present application in view of the cited prior art references because Li et al. and Cali et al., either separately or in combination with each other, fail to teach or suggest: "determining a first average backoff interval by measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource;" and "refraining from contending for access to the shared resource for at least an interval substantially equal to the first average backoff interval."

On page 5 of the Final Office Action, Claims 1, 2, 4-7, 13, 17, 22, 25, 28, 30, and 32 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Li et al. and Cali et al. Appellant respectfully requests the Board reverse the rejection. In addition, to the various arguments presented in the previous Appeal Brief, Appellant respectfully requests consideration of the arguments below.

With regard to independent claims 1, 13, and 22 of the present application, the Examiner asserted that Li et al. teaches each and every feature recited in these claims including "determining a first average backoff interval by measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource" and "refraining from contending for access to the shared resource for at least an internal substantially equal to the first average backoff interval." Appellant respectfully disagrees with the Examiner's characterization of Li et al. and submits that for at least the reasons set forth below, the Examiner's rejection is improper and should be reversed.

On pages 15-16 of the Examiner's Answer, the Examiner stated (with emphasis added):

> The Li teaches determining a first average backoff interval by measuring an average wait time that one of said plurality of stations incurs (see overview of paragraphs 0014-0016, fig. 5, and paragraphs 0059-0064, where the backoff interval is determined by measuring an average wait time before successful receipt of data). The claim language describes measuring an "average wait time" that the first station incurs. A broadest reasonable interpretation of the claim term "average wait time" would include a measurement of network throughput, as the successful transmission ratio of the network would determine the amount of time that a station would wait for access. That is, the "wait time" that a station incurs would include retransmissions due to lost packets and the collision rate of the network. The wait time is an "average" because it is the sum of multiple previous attempts defining a rate (see paragraphs 0062-0064 describing a portion of the calculation process). The average wait time is used to calculate an average backoff interval (see overview in paragraphs 0014-0016, where an average window is sent to all stations to adjust the system's collision rate, and consequently the average wait time that each station is incurring).

Appellant respectfully disagrees with the Examiner's apparent assertion that a "measurement of network throughput" as described by Li et al. is analogous to the claimed "average wait time." Li et al. fails to disclose any relationship between "throughput" and an "average wait time" as claimed. As discussed in the Appeal Brief, Li et al. describes that "throughput is the amount of data transferred from one user to another user in a specified amount of time. In contention resolution algorithms, throughput is often measured as a ratio of the number of successful transmissions to the total number of transmission opportunities." (*See, e.g.,* paragraph [0007].) Merely defining "throughput" as an "amount of data transferred ... in a specified amount of time" does not disclose, teach, or suggest an "average wait time" as claimed. Indeed, nothing in Li et al. indicates that the "specified amount of time" during which certain data is transferred is equal to an "average wait time" that is measured to determine a "first average backoff interval."

Instead, Li et al. is directed to methods and systems "for data collision resolution wherein the same back-off window is sent to a plurality of remote users and is recalculated to maintain a constant collision rate and thereby increase throughput." (*See, e.g.,* Abstract of Li et al.) The back-off window of Li et al. (which the Examiner appears to analogize to the claimed "average backoff interval") is calculated, for example, "based on the collision rate of the system, and, in another embodiment, the back-off window is adjusted to maintain a constant collision rate of approximately 1-2/e." (emphasis added). (*See, e.g.,* paragraph [0014] of Li et al.) The "collision rate" is not the same as an "average wait time" and does not provide an indication of

an "average wait time" may be calculated and used to "determine a first average backoff interval" as claimed.

As quoted above, the Examiner further stated on page 16 of the Examiner's Answer that the "wait time is an 'average' because it is the sum of multiple previous attempts defining a rate (see paragraphs 0062-0064 ...)." Paragraphs 0062-0064 of Li et al. appear to disclose that the "back-off window" is modified based on various determinations of "collisions" as indicated by a "collision counter" and based on a number of "reservation slots." Paragraphs 0062-0064 of Li et al. fail to provide any indication that the "back-off window" is in any way modified based on a "wait time" or an "average wait time."

In addition, Appellant respectfully submits that the "backoff window" of Li et al. is not analogous to the claimed "average backoff interval" as alleged by the Examiner. On page 17 of the Examiner's Answer, the Examiner continued to analogize the "back-off window" of Li et al. to the claimed "average backoff interval." Appellant respectfully disagrees with the Examiner's characterization of the "back-off window" of Li et al. The "backoff window" of Li et al. merely sets a range over which a station may randomly choose a backoff interval. For example, the operation of the "backoff window" is defined in paragraph [0011] of Li et al. as an interval in which, "if the transmitting user detects a collision, it re-transmits k slots later, where k is a random integer number uniformly distributed over the interval $[1, 2^i]$. The interval over which the uniformly distributed number is drawn is hereafter referred to as the back-off window." (Emphasis added).

In contrast, and as set forth in each of independent claims 1, 13, and 22 of the present application, the currently claimed average backoff interval relates to an interval during which the station "refrains from contending for access to the shared resource." (Emphasis added). The two terms (backoff window and backoff interval) are directed to distinct medium access attributes and are not interchangeable in the manner that the Examiner has asserted. Because Li et al. explicitly teaches re-transmitting during the back-off window, Appellant submits that Li et al. cannot be interpreted to read on at least this feature of the independent claims of the present application. In fact, Appellant submits that Li et al. teaches away from independent claims 1, 13, and 22 of the present application for at least this reason.

In response to the above argument regarding the "backoff window" of Li et al. as compared to the claimed "average backoff interval," the Examiner stated on page 17 of the Examiner's Answer (with emphasis added):

> the claim language describes a "backoff interval" that is used by a first station to refrain from contending for access for at least an interval "substantially equal" to the first average backoff interval. Stated alternatively, the claimed first station must wait for a period of time that is near the determined average backoff interval. Consequently, transmitting during the interval or even after the interval would satisfy refraining for a period of time that is at least "substantially equal" to the claimed duration.

Appellant respectfully disagrees and submits that the Examiner has improperly characterized the claim language. Without providing any specific support for his reasoning, the Examiner has essentially concluded that the claim language "'substantially equal' to the first average backoff interval" is the same as "near the determined average backoff interval," and thus "transmitting during the interval or after the interval" is the same as "refraining for a period of

time that is at least 'substantially equal' to the [first average backoff interval]," as claimed. Appellant respectfully submits that the Examiner essentially has modified the claim language to suit his position without providing any evidence as to why such a modification/interpretation of the claim language is permissible. Transmitting at any time within an interval is not the same as "refraining for a period of time that is substantially equal to the first average backoff interval," as claimed. Indeed, when viewed in light of the claim language and specification, such an interpretation is clearly improper. For example, the Abstract of Wentink discloses that "during the backoff interval the station can power down its receiver and conserve power." The improper claim interpretation presented by the Examiner would thus result in transmissions while the "receiver" is powered down and thus create an inefficient/inoperable system. As such, Appellant respectfully submits that Li et al. fails to disclose, teach, or suggest "refraining from contending for access to said shared resource for at least an interval substantially equal to the first average backoff interval," as claimed.

Moreover, Appellant submits that the alleged combination of Li et al. and Cali et al. (even if for the sake of argument, Cali et al. could be interpreted as teaching some average wait time measurement, which Appellant does not concede), still would not disclose, teach, or suggest the elements recited in each of independent claims 1, 13, and 22. That is, in accordance with the Examiner's reasoning, Cali et al. would merely "provide the average backoff interval calculation of Cali in the system of Li..." However, providing a backoff interval with which to modify the systems and methods disclosed in Li et al., would merely result in Li et al. re-transmitting/transmitting during a backoff window, where the backoff window happens to be

calculated in the manner suggested by Cali et al. Thus, Appellant submits that the alleged combination of Li et al. and Cali et al. would still fail to disclose, teach, or suggest "refraining from contending for access to the shared resource for at least an internal substantially equal to the first average backoff interval," as claimed.

In addition, on page 19 of the Examiner's Answer, the Examiner asserted that there is no contradiction in the Final Office Action dated August 27, 2010. Appellant respectfully disagrees. For example, lines 7 and 11-13 on page 5 of the Final Office Action state:

> As per claims 1, 13, and 22, Li teaches ... the first station determining a first average backoff interval by measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource....

In contrast to this assertion that Li et al. does teach such an element, in lines 6-7 on page 6 of the Final Office Action, the Examiner stated that "Li is silent as to measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource." As such, the Examiner has stated both that Li does and does not teach "measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource." Appellant therefore submits that the Examiner's rejection of independent claims 1, 13, and 22 is improper as it is unclear as to how the Examiner is interpreting Li et al.

In light of the various reasons discussed above, Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness, and therefore requests that the Examiner's rejection of independent claims 1, 13, and 22 be reversed.

Because claims 2, 4-7, 17, 25, 28, 30, and 32 of the present application are each dependent upon independent claims 1, 13, or 22, Appellant further submits that the alleged combination of Li et al. and Cali et al. fails to disclose, teach, or suggest each and every feature recited therein for at least the same reasons as discussed above. Appellant therefore respectfully requests that the Examiner's rejection of independent claims 2, 4-7, 17, 25, 28, and 30 of the present application also be reversed.

II. The Examiner has not established a prima facie case of obviousness with regard to claims 3, 8-12, 14, 18, 21, 23, 26, 27, 29, and 31 of the present application in view of the cited prior art references because Singh et al. cannot cure the deficiencies of Li et al., Cali et al.

In the August 27, 2010 Final Office Action, claims 3, 8-12, 14, 18, 21, 23, 26, 27, 29, and 31 of the present application were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Li et al. and Cali et al. in view of "PAMAS – Power Aware Multi-Access Protocol with Signaling for Ad Hoc Networks" (Singh et al.). Appellant respectfully disagrees with the Examiner's position and submits that, for at least the reasons set forth below, the Examiner's rejection is improper and should be reversed.

As set forth on pages 9-14 of the Final Office Action, the Examiner exclusively relied upon Li et al. and Cali et al. to allegedly establish a *prima facie* case of obviousness with respect to their respective base (independent) claims. For at least the same reasons as noted above, Appellant submits that Li et al. and Cali et al. fail to support a *prima facie* case of

obviousness with regard to claims 3, 8-12, 14, 18, 21, 23, 26, 27, 29, and 31 of the present application.[1]

Furthermore, Appellant submits that it is improper to combine Singh et al. with Li et al. and Cali et al. for at least the reason that these references teach away from any reasonable combination.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Furthermore, an obviousness rejection is improper if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In this instance, Li et al. and Cali et al. teach methods and systems that require a receiver to stay powered on in order to monitor the wireless medium and calculate/update an optimum backoff window. Accordingly, modifying Li et al. and Cali et al. in the manner asserted by the Examiner in view of Singh et al. (i.e., powering down the receiver when there are no frames to transmit) would render the alleged combination of Li et al. and Cali et al. unable to monitor the medium and modify the backoff window to optimize the efficiency of the protocol. Hence, Appellant submits that modifying Li et al. and Cali et al. in the manner asserted by the

[1] It should be noted that claims 8 and 18 of the present application are independent claims reciting substantially similar limitations as those recited in, e.g., dependent claim 3 which includes the limitations recited in, e.g., independent claim 1 of the present application.

Examiner would, for the reasons enumerated above, result in the alleged combination of Li et al. and Cali et al. being modified unsatisfactorily for their intended purpose.

On page 21 of the Examiner's Answer, the Examiner continues to assert that the combination of Li et al, Cali et al., and Sing et al. is proper. However, the Examiner has again failed to respond to Appellant's argument that the purported combination would render Li et al. and Cali et al. unsatisfactory for their intended purpose. The Examiner has instead merely repeated her view that it would have been obvious to combine these references "because doing so would allow the use of a power-saving mode that is beneficial for conserving battery power in mobile stations." However, the Examiner has failed to indicate how the resulting inability of the stations of Lie et al. and Cali et al. to monitor the medium and modify the backoff window due to the stations be powered down would be remedied or would not render Lie et al. and Cali et al. unsatisfactory for their intended purpose.

For at least these reasons as well, Appellant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), and that the Examiner's rejections of claims 3, 8-12, 14, 18, 21, 23, 26, and 27 should be reversed.

For at least these reasons as well, Appellant submits that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), and that the Examiner's rejection of claims 3, 8-12, 14, 18, 21, 23, 26, and 27 should be reversed.

Respectfully submitted,

Date May 16, 2011

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CLAIMS APPENDIX

1. (Previously Presented, Rejected) A method for accessing a shared resource comprising:

a first station sharing a resource with a plurality of other stations;

the first station determining a first average backoff interval by measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource; and

once it is determined that the first station desires access to the shared resource and the shared resource first becomes available, the first station refraining from contending for access to said shared resource for at least an interval substantially equal to the first average backoff interval.

2. (Previously Presented, Rejected) The method of claim 1, further comprising the first station transmitting a frame to one of the other stations using the shared resource after said first average backoff interval has passed, wherein said shared resource is a shared-communications channel.

3. (Previously Presented, Rejected) The method of claim 1, further comprising, after the first average backoff interval is determined, the first station powering down a receiver circuit for at least a portion of said first average backoff interval while the first station is refraining from contending for access to the shared resource.

4. (Previously Presented, Rejected) The method of claim 1, wherein said first average backoff interval is further based on a moving average.

5. (Previously Presented, Rejected) The method of claim 1, further comprising the first station refraining from contending for access to the shared resource for a second random backoff interval beyond said first average backoff interval.

6. (Previously Presented, Rejected) The method of claim 5, wherein said second random backoff interval assumes a nonzero value only after an unsuccessful attempt to transmit occurs.

7. (Previously Presented, Rejected) The method of claim 1, wherein said backoff interval is constrained to be at least as long as an 802.11 distributed interframe space.

8. (Previously Presented, Rejected) A method for accessing a shared resource comprising:

a first station sharing a resource with a plurality of other stations;

the first station determining a first average backoff interval by measuring an average wait time that the first station incurred during a plurality of previous access attempts to the shared resource;

once it is determined that the first station desires access to the shared resource and the shared resource first becomes available, the first station refraining from contending for access to said shared resource for at least an interval substantially equal to said first average backoff interval; and

after the first average backoff interval is determined, the first station powering down a receiver circuit for at least a portion of said first average backoff interval while the first station is refraining from contending for access to the shared resource.

9. (Previously Presented, Rejected) The method of claim 8, further comprising the first station transmitting a frame to one of the other stations using the shared resource after said first average backoff interval has passed, wherein said shared resource is a shared-communications channel.

10. (Previously Presented, Rejected) The method of claim 8, wherein said first average backoff interval is further based on a moving average.

11. (Previously Presented, Rejected) The method of claim 8, further comprising the first station refraining from contending for access to the shared resource for a second random backoff interval beyond said first average backoff interval.

12. (Previously Presented, Rejected) The method of claim 11, wherein said second random backoff interval assumes a nonzero value only after an unsuccessful attempt to transmit occurs.

13. (Previously Presented, Rejected) An apparatus comprising:

a transmitter for transmitting data over a shared resource; and

a processor configured to determine a first average backoff interval by measuring an average wait time that the transmitter incurred during a plurality of previous attempts to access the shared resource and, once it is determined that the apparatus desires access to the shared resource and the shared resource first becomes available, to cause the apparatus to refrain from contending for access to said shared resource for at least an interval substantially equal to the first average backoff interval.

14. (Previously Presented, Rejected) The apparatus of claim 13, further comprising a receiver for receiving data from the shared resource;

wherein the processor is configured to power down the receiver for at least a portion of said first average backoff interval while the apparatus is refraining from contending for access to the shared resource.

15.-16. (Canceled)

17. (Previously Presented, Rejected) The apparatus of claim 13, wherein said shared resource is a shared-communications channel and wherein said transmitter communicates over the shared-communications channel in accordance with an IEEE 802.11 protocol.

18. (Previously Presented, Rejected) A system comprising:

a station and an access point communicating over a shared resource, the access point configured to:

determine a first average backoff interval value by measuring an average wait time that the access point incurred during a plurality of previous attempts to access the shared resource; and

distribute the first average backoff interval value to the station,

the station configured to:

transmit data over said shared resource;

receive the first average backoff interval value from said access point;

once it is determined that the station desires access to the shared resource and the shared resource first becomes available, refrain from contending for access to said shared resource for at least a first interval substantially equal to said first average backoff interval value; and

power down a receiver circuit for at least a portion of said first interval while the station refrains from accessing the shared resource.

19.-20. (Canceled)

21. (Previously Presented, Rejected) The system of claim 18, wherein the station refrains from contending for access to the shared resource for a second random backoff interval beyond said first average backoff interval.

22. (Previously Presented, Rejected) An apparatus comprising:

a means for transmitting data over a shared resource;

a means for determining a first average backoff interval by measuring an average wait time that the means for transmitting incurred during a plurality of previous access attempts; and

a means for determining that the apparatus desires access to the shared resource and that the shared resource has first become available, and for causing the apparatus to refrain from contending for access to said shared resource for at least an interval substantially equal to the first average backoff interval.

23. (Previously Presented, Rejected) The apparatus of claim 22, further comprising a means for, after the first average backoff interval is determined, powering down a receiving means for at least a portion of said first average backoff interval while the apparatus refrains from contending for access to the shared resource.

24. (Canceled)

25. (Previously Presented, Rejected) The apparatus of claim 22, wherein said shared resource is a shared-communications channel and wherein said means for transmitting transmits over the shared-communications channel in accordance with an 802.11 protocol.

26. (Previously Presented, Rejected) The method of claim 3, further comprising the first station powering down a transmitter circuit for at least the same portion of said first average backoff interval.

27. (Previously Presented, Rejected) The apparatus of claim 14, wherein the processor is configured to power down the transmitter for at least the same portion of said first average backoff interval.

28. (Previously Presented, Rejected) The method of claim 1, wherein the first station measuring an average wait time comprises:

the first station measuring a plurality of wait times, each wait time measured (i) from a time that the first station first determines that the shared resource has become idle (ii) to a time that the first station actually transmits a pending frame on the shared resource; and

calculating an average of the plurality of wait times.

29. (Previously Presented, Rejected) The method of claim 8, wherein the first station measuring an average wait time comprises:

the first station measuring a plurality of wait times, each wait time measured (i) from a time that the first station first determines that the shared resource has become idle (ii) to a time that the first station actually transmits a pending frame on the shared resource; and

calculating an average of the plurality of wait times.

30. (Previously Presented, Rejected) The apparatus of claim 13, wherein measuring an average wait time comprises:

the processor being configured to measure a plurality of wait times, each wait time measured (i) from a time that the processor first determines that the shared resource has become idle (ii) to a time that the transmitter actually transmits a pending frame on the shared resource; and

the processor being configured to calculate an average of the plurality of wait times.

31. (Previously Presented, Rejected) The system of claim 18, wherein measuring an average wait time comprises:

the access point being configured to measure a plurality of wait times, each wait time measured (i) from a time that the access point first determines that the shared resource has

become idle (ii) to a time that the access point actually transmits a pending frame on the shared resource; and

the access point being configured to calculate an average of the plurality of wait times.

32. (Previously Presented, Rejected) The apparatus of claim 22, wherein measuring an average wait time comprises:

the means for determining measuring a plurality of wait times, each wait time measured (i) from a time that the apparatus first determines that the shared resource has become idle (ii) to a time that the apparatus actually transmits a pending frame on the shared resource; and

the means for determining calculating an average of the plurality of wait times.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.